

SECRET
ROUTING AND RECORD SHEET

INSTRUCTIONS: Officer designations should be used in the "TO" column. Under each comment a line should be drawn across sheet and each comment numbered to correspond with the number in the "TO" column. Each officer should initial (check mark insufficient) before further routing. This Routing and Record Sheet should be returned to Registry.

FROM: OC-E				NO. REFERENCE NO. XCE2-29, DATE 5 June 1952	
TO	ROOM NO.	DATE		OFFICER'S INITIALS	COMMENTS
		REC'D	FWD'D		
1. OC-A		JUN 5	1952	RDC	<p>)</p> <p>) FOR COORDINATION ON TISSUE COPY.</p> <p>) OC-E: Pls make arrangements with OC-A/m s B to forward an appropriate requisition referring this action as soon as possible in order to prevent any hold up of action on this item! <i>my</i></p> <p>FOR SIGNATURE</p> <p><i>Antony come out clone to 600 K hand in</i></p> <p>FOR FORWARDING</p>
2. OC-P				<i>Hand</i>	
3. OC-2				<i>5 m</i>	
4. OC-E	JUN 6	1952		<i>Jff</i>	
5. OC		JUN 9	1952	<i>7</i>	
6.					
7. REGISTRY					
8.					
9.					
10.					
11.					
12.					
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14.					
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CONFIDENTIAL**SECRET**
Security Information8c-452
JUN 9 1952

Chief of Procurement and Supply

Assistant Director for Communications

Request for Negotiation of Microwave Contract with [REDACTED]

25X1

1. [REDACTED] is an item which appears on the Agency's list of standard communications equipment which has been approved for negotiated procurement. This equipment was first entered on the approved list early in 1951. Due to the fact that the field of microwave transmission has undergone extensive improvement in the last year, it was determined in the best interests of the Agency to have a complete survey of this field made prior to the procurement of additional equipment. 25X1

2. Consequently, the consulting radio engineering firm of [REDACTED] was requested to make a complete study of the Agency's microwave requirements, with special emphasis placed on the system to be used in the vicinity of Washington, D. C. As a result of technical studies, they submitted a report in which they advocated the use of equipment designed for operation in the 6,000 to 7,000 megacycle band. This automatically limits procurement of equipment to two manufacturers; namely, [REDACTED] since they are the only ones currently manufacturing equipment for operation in this frequency range. 25X1

3. The decision on whether to procure [REDACTED] equipment for Agency use was made, taking into account the following pertinent factors: 25X1

a. While the equipment of both manufacturers is technically satisfactory, there are many specific technical features found in the [REDACTED] equipment which make it particularly suitable for our intended applications. 25X1

b. Quoted delivery dates obtained from both manufacturers definitely favor [REDACTED] 25X1

c. The cost of [REDACTED] equipment is appreciably less than that of [REDACTED] 25X1
25X1

d. Audio multiplex apparatus required for use in connection with the basic microwave equipment is manufactured directly by [REDACTED] but in the case of [REDACTED] it is manufactured on a sub-contract basis. 25X1

e. The microwave equipment presently in use by the Agency is of [REDACTED] manufacture. 25X1

Predicated on the above factors, and taking into account the technical report of [REDACTED], it has been determined that [REDACTED] microwave equipment best suits the needs of the Agency at this time. 25X1

DOI 2	REV DATE 15/4/80	BY 37169
ORIG COMP 33	OPI 56	TYPE 2
ORIG CLASS 5	PAGES 19	REV CLASS C
NEXT REV 2010	AUTH: HR 10-6	

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4. It is, therefore, requested that a contract be negotiated with [] 25X1 Inc. for the procurement of microwave equipment and engineering services as outlined in their proposal MW-2054 dated 12 May 1952, copies of which are attached. It should be noted that the equipment represented by the proposal is broken down into Divisions 1 through 5. Delivery of the equipment delineated in Divisions 1 and 5 is necessary within 60 days. Division 2 should be delivered within 90 days, and the equipment represented by Divisions 3 and 4 should be received as soon as possible, and in no event later than six months from the date of the contract. It is desired that all equipment and engineering services outlined in Proposal MW-2054 be procured, except for the following:

a. With respect to items MW-2054 20 through 23, it should be noted that [] 25X1 has submitted an alternate as well as a basic proposal. It is requested that procurement of the basic items be executed rather than those quoted on the alternate proposal.

b. No procurement is requested at this time on item MW-2054-50, "Alternate for []". 25X1

5. It is further requested that six, 2 terminal, 12 channel, A to B, packaged microwave stations be procured. Each of these packaged microwave stations will consist of items 1 through 4 as listed on [] undated. 25X1 quotation, MW-2150, copies of which are attached. Procurement is also requested of one 24 channel, 2 terminal, A to B, packaged microwave station, comprising items 11 through 14 of quotation MW-2150. No procurement is requested of items 5 through 10.

6. The total estimated equipment and engineering costs are as follows:

a. []	25X1
(1) Total equipment costs, items 1 through 49, (Less test equipment) \$293,502.13	
(2) Total engineering services	53,214.00
(3) Total test equipment	5,500.00
	<hr/>
	\$352,216.13
b. []	25X1
Total cost of Microwave [] 12 channels	25X1
Items 1 through 4, 6 required @ \$33,202.00 each	199,692.00
c. []	25X1
Total cost of Microwave [] 24 channels,	25X1
Items 11 through 14, 1 required at \$46,806.00 each	46,806.00
	<hr/>
GRAND TOTAL	\$598,714.13

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7. Funds are available in the amount of \$600,000. covered by Allotment No. 9095-09 for the fiscal year 1952.

8. The connection of the Agency with the procurement of this equipment is to be classified SECRET.

25X1

Attachments -

2 copies

2 copies

dated 12 May 1952
, undated.

25X1

cc: (less attachments)

OC-A

OC-P

OC-E (Cont. File)

JRS:den

ENGINEERING/JFS

COORDINATION:

ah
OC-A

RSS
OC-P

M
OC-2

*m-596
Sent 9 June 52*

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SECRETCopy 4 of 5

SECURITY INFORMATION

Copy 1 + 3 to Contracts
 Copy 2 - Local - Motorola
 Copy 4 - Case/Eng.
 Copy 5 - Chicago - Motorola

This document consists of 20 pages
 No. A of 5 copies, Series A

May 12, 1952

United States Government
 Washington 25, D. C.

Subject:

25X1

Gentlemen:

is pleased to transmit attached, its Proposal described more in detail in the subject above.

25X 25X1

Also attached and made a part of this proposal is a compilation entitled "System Technical Provisions." Set out therein are certain departures from the subject "Requirements" which we believe will meet with your approval.

It is our understanding that you will cause to have made the tests to be made contained in the paragraph on Page 8 of the subject "Requirements" entitled "Manner of delivery and conditions for acceptance of system."

In connection with the same paragraph, you will find on the attached pricing sheet under each Location, various item numbers subordinate to the number which uniquely describe each class of equipment at each Location. It will by this means be unnecessary to further employ Location designations in correspondence or shipping.

25X1

Sufficient test equipment is included in the attached pricing sheet under to meet the requirements of "Maintenance Provisions" Page 6 of the "Requirements." Spare parts are also included on the unit attached.

25X1

Test equipment proposed follows:

<u>Quantity</u>	<u>Description</u>	<u>Price</u>	<u>Extension</u>
4	PA-8986 - Portable Panoramic Analyzer	\$ 750.00	\$3,000.00
1	P-8808 - Modulation Meter	2,500.00	2,500.00

It is our understanding that most urgent handling is to be accorded to Divisions 1 and 5, and that a somewhat less urgent handling is to be

#5,5

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United States Government

-2-

May 12, 1952

accorded the remaining divisions of the system. Shipment for Divisions 1 and 5 will proceed from our Chicago Plant 60 days from date of firm purchase order. Shipment for the remaining divisions will proceed shortly thereafter.

It is our intention under this proposal that payment be made in accordance with our standard terms, net 30 days, items as shipped.

The price of equipment quoted on the attached sheets including electronic equipment, spare parts, buildings, towers and reflectors, totals ~~\$293,252.13~~ ^{293,502.13}, taxes where applicable not included. Building prices include necessary foundations and wiring. Necessary foundations for "Remote" type equipment at locations as follows are not included:

<u>Location</u>	<u>Number of Foundations</u>
-----------------	------------------------------

	3
	2
	1
	1

25X1

Prices are firm for 30 days from the date of this letter.

Prices quoted are FOB Chicago, with the exception of reflectors for mounting on existing towers, prices for which are FOB Sioux City, Iowa. Freight costs and shipping weights will be forwarded shortly.

Engineering services, including systems engineering involved in finalizing the system layout, preparing production information, final testing all equipment, field installation and alignment, and system optimization are listed in the items below.

Item I Engineering services associated with

25X1
\$ 6,2625X1✓

Item II Engineering services associated with

6,0025X1✓

Item III Engineering services associated with

40,525X1✓

\$ 53,214.00

The above engineering costs may be reduced if the installation of the equipment can be made without interruption. We agree to keep a record of man-days expended and if the actual cost is less than the proposal price, a credit will be issued for the difference. In no event will

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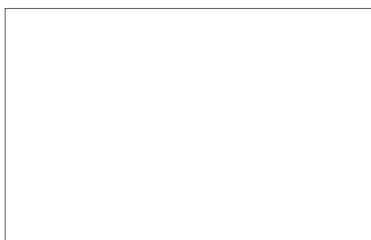
-3-

May 12, 1952

the cost exceed the figure quoted above.

We look forward to serving you.

Very truly yours,



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The equipment proposed by [redacted], to comply with the requirements of a microwave system as outlined by [redacted] in a detailed breakdown, dated May 1952, is detailed in the following paragraphs.

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The information provided here is detailed by [redacted] as well as being grouped by division. It is intended to form the basis of an equipment contract covering the entire system referred to above. A separate contract will be negotiated to cover the engineering and installation aspects of this system.

25X1

LOCATION [redacted]

25X1

This station is a part of Divisions 1, 2, 3 and 4.

Item MW

2054-1

Tower and Antenna: A suitable tower is available at this location. The following material and services will be supplied at this location:

- (a) One 4' x 6' reflector to be furnished to the contractor will be mounted at the 100' level of the tower
- (b) Two 8' x 12' reflectors to be furnished to the contractor will be mounted at the 200' level of the tower at no charge.

Total item

~~24,576.00~~ No charge

2054-2

R.F. Equipment:

- (a) Two Remote type repeater equipments complete with parabolic antennas and full standby equipment and necessary cabling.

- (b) Four Sola voltage regulating transformers 2 KVA.

\$ 24,576.00

2054-3

Subcarrier Multiplex Equipment consisting of:

- (a) Three twelve channel basic multiplex assemblies made up of six cabinets, twelve subcarrier frames, three power supply, six meter panels and three cable kits.
- (b) Twenty-four subcarrier receivers
- (c) Twenty-four subcarrier transmitters
- (d) Twenty-four voice terminations

Total item

\$ 9,184.00

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Item MW

LOCATION ☐ (continued)

25X1

2054-4

Subcarrier and Teletype Patching Facilities Consisting of:

Terminal blocks, cabling, patch cords and associated equipment to provide subcarrier patching facilities for forty-six subcarrier channels and 15 wire circuits. Teletype patching facilities will provide for sixty-one two-way teletype circuits, twenty receive wire circuits and twenty transmit wire circuits.

\$ 6,707.28

2054-5

Teletype Multiplexing Equipment Consisting of:

- (a) Thirty AFC dual channel transmitters
- (b) Twenty-seven AFC dual channel receivers
- (c) Twenty-two AFC power supplies
- (d) Twelve fixed rack cabinets
- (e) Cabling and terminal boards.
- (f) DC break-in unit

Note: This equipment will be supplied adapted to utilize the WE 255-A relay, but not equipped with these relays.

Total Item

32,076.50

Total / \$ 72,545.78 ✓

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DIVISION 1

25X1

Item No

LOCATION

2054-6

Tower and Antenna:

One H-type, dual, guyed microwave tower 150' in height delivered and erected complete with two 6' x 8' passive reflectors top mounted including A-2 lighting \$ 4,995.70

2054-7

R.F. Equipment:

- (a) One micropackage type repeater equipment complete with stand by electronic equipment and antennas \$ 9,225.00
- (b) One Sola voltage regulating transformer 3 KVA \$ 325.00
- (c) Armco steelox shelter for all equipment, complete with foundation and wired ready for use, 9'4" x 18'0" \$2,484.00

2054-8

Subcarrier Multiplex Equipment consisting of:

- (a) One twelve channel basic multiplex assembly
- (b) Twelve subcarrier receivers
- (c) Twelve subcarrier transmitters
- (d) Twelve voice terminations
- (e) Associated cabling and blank panels

Total Item \$ 3,782.00

2054-9

Subcarrier Patching Facilities consisting of:

Terminal blocks, cabling, patch cords and associated equipment required to provide patching facilities for twelve subcarrier channels, and also to be used in conjunction with the teletype multiplexing equipment to provide teletype patching. \$ 874.68

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Item MW LOCATION ☐ (Con't)

25X1

2054-10- Teletype Multiplexing Equipment Consisting of:

- (a) Twelve AFC dual channel transmitters.
- (b) Twelve AFC dual channel receivers.
- (c) Eight AFC power supplies.
- (d) Four fixed rack cabinets.
- (e) Necessary cabling and terminal boards.
- (f) DC break-in unit.

Total Item

\$ 10,498.00

Total 32,184.38 ✓

DIVISION I

Item #	LOCATION 	25X1
2054-11	Tower and Antenna: One 6' x 8' reflector will be supplied and mounted on an existing tower at the 150' level.	\$ 850.00
2054-12	<u>R.F. Equipment Consisting of:</u> <ul style="list-style-type: none"> (a) One Remote type terminal station complete with parabolic antenna and full standby equipment and necessary cabling. <p>Note: This equipment is listed as a terminal for purposes of allocating it properly by division. Location O will actually be supplied one Remote type repeater station assembled to operate as two terminal stations.</p> <ul style="list-style-type: none"> (b) Two Sola voltage regulating transformer, 2 KVA <p style="text-align: right;">Total Item, Division I</p>	6,144.00
2054-13	<u>Subcarrier Multiplexing and Patching:</u> <ul style="list-style-type: none"> (a) One twelve channel basic multiplex assembly. (b) Twelve subcarrier receivers. (c) Twelve subcarrier transmitters. (d) Twelve voice terminations. (e) Necessary cabling and blank panels. <p style="text-align: right;">Total Item, Division I</p>	5,061.40
2054-14	<u>Teletype Multiplexing:</u> <ul style="list-style-type: none"> (a) Twelve AFC dual channel transmitters. (b) Twelve AFC dual channel receivers. (c) ^{Eight} Seven AFC power supplies. (d) ^{Five} Four fixed rack cabinets. (e) Necessary cabling and terminal boards. (f) DC break-in unit. <p style="text-align: right;">Total Item, Division I</p>	10,698.00 10,389.50

Total 22,753.40 ✓

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DIVISION 2

(For Location ☐ See Division 1)

25X1

Item MW

LOCATION ☐

25X1

2054-15 Tower and Antenna: One H-type, dual guyed microwave tower, 150 feet in height, delivered and erected complete with two 6' x 8' reflectors top mounted, including A-2 lighting \$4,995.70

2054-16 Building: One 9'4" x 12'0" "Armed" Steel building to house ☐ "Micropackage" type microwave equipment (see next item below) Price installed \$2,187.50

25X1

2054-17 R.F. Equipment: (a) One ☐ "Micropackage" type repeater equipment complete with standby electronic equipment and antennas

(b) Sole voltage regulating transformer 2 KVA

Total Item \$9,240.00

25X1

2054-19 Multiplexing: Portable order wire terminations, and alarm transmitter for three quantities, with capacity for two additional spare quantities \$ 766.00

\$17,189.20 ✓

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SECURITY INFORMATION

SECRETDIVISION 2 (continued)

Item MW	<u>LOCATION</u> <input type="checkbox"/>		25X1
2054-20	<u>Tower and Antennas:</u>	(Tower and reflector not required) - Vertical mount antenna kit (A frame)	None
2054-21	<u>R.F. Equipment:</u>	(Equipment now at Location to be removed to Location Sola 2 KVA VR transformer <input type="checkbox"/>)	25X1
			\$ 245.00
2054-22	<u>Multiplexing and Patching:</u>	(Equipment now at Location to be removed to Location <input type="checkbox"/>) No new equipment required) Patching facilities	25X1
			1,042.92
2054-23	<u>Teletype Multiplexing:</u>	Five dual channels PA-7705-E, AF Carrier Transmitters and five dual channels PA-7706-A AF Carrier Receivers (Ten channels each transmit and receive) and DC break-in unit to provide one teletype loop circuit	
		Total Item	4659.00 1,409.00

Sub #5,946.92✓
Total R+K #23,136.12✓

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SECRETDIVISION 2 (continued)(Alternate proposal based on
supplying new equipment for
Location K)

Item MW	<u>LOCATION</u> 	25X1
2054-20	<u>Tower and Antenna:</u> (Not required)	
2054-21	<u>R.F. Equipment:</u> (a) One Remote type terminal complete with parabolic antenna suitable for vertical mounting, vertical mounting kit, and full standby equipment and necessary cabling (150 ft). (b) One Sola voltage regulating transformer, 2 KVA	
	Total Item	\$ 7,199.00

2054-22	<u>Multiplexing and Patching:</u>	
	(Equipment now at to be removed to - No new equipment required)	25X1 25X1
	Patching facilities	1,042.92

2054-23	<u>Teletype Multiplexing:</u>	
	Five dual channels PA-7705-E, AF Carrier Transmitters and five dual channels PA-7706-A AF Carrier Receivers (Ten channels each transmit and receive) and DC break-in unit to provide one teletype loop circuit	
	Total Item	4659.00 4,409.00

*Total \$12,900.92***SECRET**

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SECURITY INFORMATION

DIVISION 3

(For Location see Division 1)

25X1

25X1

<u>Item MW</u>	<u>LOCATION</u> 		
2054-24	<u>Tower and Antennas:</u>	One H-type, dual guyed microwave tower, 200 feet in height, delivered and erected complete with two 8' x 12' reflectors, top mounted and including A-3 lighting	\$ 7,679.65
2054-25	<u>Building:</u>	One 9'4" x 12'0" "Armco" Steel building to house Motorola "Micropackage" type microwave equipment (see next item below)	\$ 2,187.50
2054-26	<u>R.F. Equipment:</u>	(a) One Motorola "Micropackage" type repeater equipment complete with standby electronic equipment and antennas (b) Sola voltage regulating transformer 2 KVA Total item	\$ 9,240.00
2054-27	<u>Multiplexing:</u>	Portable order wire termination and alarm transmitter for three quantities with capacity for two additional spare quantities	\$ 766.00

Total \$19,873.15 ✓

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SECURITY INFORMATION

SECRETDIVISION 3

Item MW	LOCATION <input type="checkbox"/>		25X1
2054-28	<u>Antenna and Tower:</u>	One, H type, dual guyed micro-wave tower, 100 ft. in height delivered and erected, complete with one 6' x 8' reflector top mounted including A-2 lighting.	
		Price Installed	\$ 3,498.70
2054-29	<u>Buildings:</u>	One 9'4" x 12'0" "Armco" steel building to house Motorola "Micropackage" type microwave equipment (see next item below)	
		Price Installed	2,187.50
2054-30	<u>R.F. Equipment:</u>	(a) One <input type="checkbox"/> "Micropackage" type terminal equipment complete with standby electronic equipment and one antenna	25X1
		(b) One Sola voltage regulating transformer, 2 KVA	
		Total Item	6,020.00
2054-31	<u>Multiplexing:</u>	Subcarrier transmitting and receiving equipment consisting of	
		(a) One twelve channel basic assembly, comprising cabinet, subcarrier frames, power supply meter panel and one cable kit.	
		(b) Six subcarrier receivers	
		(c) Six subcarrier transmitters	
		(d) Six voice terminations	
		Price	4,444.92
2054-32	<u>Teletype Multiplexing:</u>	Seven dual channels <input type="checkbox"/> PA-7705-D, Audio Frequency Carrier transmitter and Seven dual channels <input type="checkbox"/> PA-7706-A AFC receivers (14 channels transmit and receive total) for providing 14 teletype channels on subcarrier channels. Also one DC break-in unit.	25X1
			25X1
		Price	5,689.00

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Total \$21,840.12 ✓

SECRETDIVISION 1

Item MW.

LOCATION

25X1

2054-33

Antenna and Tower Requirement:

One H-type, dual, guyed micro-wave tower 200 feet in height delivered and erected complete with two 8' x 12' reflectors top mounted including A-3 lighting \$ 7,354.65

2054-34

R.F. Equipment Consisting of:

- (a) One remote type repeater equipment complete with stand-by electronic equipment and antennas
- (b) Two Sola voltage regulating transformers, 2 KVA

Total Item 12,444.00

2054-35

Subcarrier Multiplexing and Patching Equipment:

- (a) Two twelve channel multiplexing assemblies made up of a total of four cabinets, eight subcarrier frames, two power supplies, four meter panels and two cable kits.
- (b) Twelve subcarrier receivers
- (c) Twelve subcarrier transmitters
- (d) Twelve voice terminations

Total Item 7,814.22

2054-36

Teletype Multiplexing Equipment:

- (a) Seven AFC dual channel receivers
- (b) Twelve AFC dual channel transmitters
- (c) Ten AFC power supplies
- (d) Six fixed rack cabinets
- (e) Necessary cabling and terminal boards
- (f) DC break-in unit

Total Item 9,315.00

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SECRETDIVISION 4

Item MW	<u>LOCATION</u> <input type="checkbox"/>		25X1
2054-37	<u>Tower and Antenna:</u>	One, H type, dual guyed microwave tower 200 ft. in height, delivered and erected complete with one 8' x 12' reflector, top mounted.	
		Price including A-3 lighting	\$ 6,834.75
2054-38	<u>R.F. Equipment:</u>	(a) Motorola "Remote" type equipment to be removed from Location <input type="checkbox"/> or re-installation at Location M. (No increase in length of control cable)	25X1 None
		(b) One Sola voltage regulating transformers, 2 KVA	
		Total Item	245.00
2054-39	<u>Multiplex Equipment:</u>	Subcarrier transmitting, receiving, voice terminal, and necessary mounting equipment, ten channels to be removed from Location <input type="checkbox"/> and relocated at Locatio <input type="checkbox"/>	25X1 4,284.80
2054-40	<u>Teletype and Telegraph Multiplexing:</u>	(a) One AFC dual channel transmitter	
		(b) Nine AFC dual channel receivers	
		(c) Four AFC power supplies	
		(d) Three fixed rack cabinets	
		(e) Necessary cabling and terminal boards	
		Total Item	5,269.00

Total \$16,633.55 ✓

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DIVISION 5

Item MW LOCATION 25X1

2054-41 Tower and Antenna: One 6' x 8' reflector will be supplied and mounted on an existing tower at the 150' level \$ 850.00

2054-42 R.F. Equipment Consisting of:

- (a) One Remote type terminal station complete with parabolic antenna and full standby equipment and necessary cabling.

Note: This equipment is listed as a terminal for purposes of allocating it properly by division. Location will actually be supplied one Remote type repeater station assembled to operate as two terminal stations. 25X1

- (b) Two Sola voltage regulating transformer, 2 KVA

Total Item, Division 5 6,144.00

2054-43 Subcarrier Multiplexing and Patching:

- (a) One twelve channel basic multiplex assembly.
- (b) Ten subcarrier receivers
- (c) Ten subcarrier transmitters
- (d) Ten voice terminations
- (e) Necessary cabling and blank panels

Total Item, Division 5 4,669.40

2054-44 Teletype Multiplexing:

- (a) Six AFC dual channel transmitters
- (b) Six AFC dual channel receivers
- (c) ^{Four} ~~Five~~ AFC power supplies
- (d) ^{Two} ~~Three~~ fixed rack cabinets
- (e) Necessary cabling and terminal boards
- (f) DC break-in unit

SECRET

Total Item, Division 5

5,374.00
~~5,682.50~~

Total / \$17,037.40 ✓

SECRETDIVISION 5

25X1

Item MW	<u>LOCATION</u> 	
2054-45	Antenna:	No tower or reflector will be utilized at this location.
2054-46	<u>R.F. Equipment:</u>	<p>(a) One Remote type terminal equipment complete with parabolic antenna suitable for vertical mounting, vertical mounting kit and full standby equipment and necessary cabling (150 feet).</p> <p>(b) One Sola voltage regulating transformer, 2 KVA</p> <p style="text-align: right;">Total Item \$ 7,199.00</p>
2054-47	<u>Subcarrier Multiplex and Patching:</u>	<p>(a) One twelve channel basic Multiplex assembly</p> <p>(b) Ten subcarrier transmitters</p> <p>(c) Ten subcarrier receivers</p> <p>(d) Ten voice terminations</p> <p>(e) Associated cabling and blank panels</p> <p style="text-align: right;">Total Item 4,464.92</p>
2054-48	<u>Teletype Multiplex:</u>	<p>(a) Six AFC dual channel transmitters</p> <p>(b) Six AFC dual channel receivers</p> <p>(c) Four AFC power supplies</p> <p>(d) Two fixed rack cabinets</p> <p>(e) Necessary cabling and terminal boards</p> <p>(f) DC break-in unit</p> <p style="text-align: right;">Total Item 5,374.00</p>

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Total \$17,037.92 ✓

Total N+O \$34,075.32 ✓

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SECURITY INFORMATION

MW 2054-49

Spare parts for all divisions consisting of:

3	P-8719 I.F. strips
1	Kit 100% spare tubes for eleven stations
100	IN23A Crystals
2	P-8812 Sensing amplifiers
1	P-8759J Video amplifier
1	P-8759K Video amplifier
1	P-8759KT Video amplifier
1	Misc. spare parts kit

Total item

\$13,532.44 ✓

MW 2054-50

Alternate for Location ☐
 Using existing equipment and adding one
 Remote type terminal equipment. This
 will also require one Remote type terminal
 equipment at Location ☐

25X1

25X1

Total item

\$ 5,296.00

~~MW 2054-51~~~~See DC Break in route~~~~2500~~~~\$2,000.00~~

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SECURITY INFORMATION

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System Technical ProvisionsGeneral

All subcarrier audio circuits will provide two or four wire termination. Each channel will be wired to a patch panel so that both two and four wire connection is available.

All subcarrier circuits will provide duplex operation with the exception of the portable order wire circuits, used between [REDACTED] which will be push-to-talk operation.

25X1

Signalling on all duplex circuits will be of the dry line, 20 cycle ringdown type. Talking battery is to be furnished by switchboard, telephone, or other terminating device.

Multiplex equipment will, in general, provide for expansion to 12 channels except where otherwise noted in detailed descriptions.

Audio Frequency Carrier equipment will provide a maximum of 14 circuits on any subcarrier channels. Cabinets will be wired to accommodate 14 circuits. The transmitters and receivers will be housed in separate cabinets. The receiver cabinet will have mounting facilities for W.E. 255A telegraph relays; however no relays will be supplied. The teletype circuits will be of the duplex variety with no provision for home copy.

Equipment will be supplied to provide series loop teletype party line circuits connecting all [REDACTED] Since the type of operation places a large number of relays in cascade, the quality of service may not be adequate unless suitable precautions are taken in replacement of relays and proper transposition of contact connections is made in order to cancel or reduce pulse distortion.

25X1

A signal-to-noise ratio of 35 db weighted, as measured with a 600 ohm resistive termination at the output of the subcarrier voice terminal, will be maintained on all circuits.

~~SECRET~~~~SECURITY INFORMATION~~

SECURITY INFORMATION

The frequency stability of the microwave transmitter will be .05% of center frequency. Microwave fading of 25 db will still provide a usable communications circuit.

Patching facilities will be furnished at each station except RI and R for all subcarrier audio circuits and an equivalent number of incoming lines. The number of circuits will be consonant with a full expansion to 12 channels on each microwave path. The subcarrier circuits will, by internal connection, be normally connected to incoming voice lines on a 2-wire basis or Audio Carrier equipment for teletype on a 4-wire basis. Patch cords will only be inserted for abnormal patching. It will be necessary to operate the 2-4 wire switch on the voice terminal to accomplish the desired patching arrangement.

Patching all individual teletype circuits at the D.C. level will be provided at Similar patching for six individual circuits will be provided at 25X1

At all stations, teletype circuits, 25X1 incoming lines, and subcarrier lines will be brought to termination block. Each individual 14 circuit teletype cabinet will have a termination block.

SECRET
SECURITY INFORMATION

2 copies to Com
1 copy - Motorola

SECRET

LT 2150

Quotation for U. S. Government
(A to B - 12 channels)

Item LT

Description

2150-1

Antenna: Two 6x8 reflectors

\$ 700.00

2150-2

R. F. Equipment:

(a) Two remote type terminal equipments complete with parabolic antennas and full standby equipment and necessary cabling.

(b) Two Gola VR transformers
Total Item

11,330.00

2150-3

Subcarrier multiplexing:

(a) Two twelve channel basic assemblies.

(b) Twenty four subcarrier transmitters.

(c) Twenty four subcarrier receivers.

(d) Twenty four voice terminations.

(e) Necessary cabling.
Total Item

6,564.00

2150-4

Teletype multiplex:

(a) Fourteen AFC dual channel transmitters

(b) Fourteen AFC dual channel receivers

(c) Eight AFC power supplies

(d) Four fixed rack cabinets

(e) Necessary cabling and terminal boards.

Total Item

11,680.00

Total \$33,282.00

SECRET

SECRET

MY 2150

Quotation for U. S. Government
(continued)

Grand Total (A to B only)
(without repeater
12 channels)

\$33,282.00 ✓

Grand Total (A to B with
remote type repeater
including order wire.
No tower.
12 channels.)

46,832.00

Grand Total (A to B with
micropackage type
repeater. No tower
but with building
and order wire.
12 channels.)

46,060.50

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SECRET

LN 2150

Repeater R. F. Equipment
(For use with either 12 or 24)
(channel A to B link)

Item MW

Description

2150-5

Antenna: Two 6x8 reflectors

\$ 700.00

2150-6

R. F. Equipment (remote type)

(a) One remote type repeater equipment complete with full standby equipment and antennas.

(b) One Sola VR transformer
Total Item

12,199.00

2150-7

R. F. Equipment (micropackage)

(a) One micropackage type repeater equipment complete with full standby equipment and antennas.

(b) One Sola VR transformer
Total Item

9,240.00

2150-8

Building (for use with 2150-7)

One 9'4"x12'0" "Armco"
steel building to house
micropackage type
equipment

2,187.50

2150-9

Multiplexing:

Portable order wire
terminal for rack
mounting complete with
subcarrier transmitter
and receiver

(a) 12 channel system

651.00

(b) 24 channel system

740.00

2150-10

Tower:

H-type, galvanized,
dual, microwave tower,
1140 ft. in height

3,818.00

\$13,550.00

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MW 2150

Quotation for U. S. Government
(A to B - 24 channels)

Item MW

Description

2150-11

Antenna: Two 6x8 reflectors\$ 700.00

2150-12

R. F. Equipment:

(a) Two remote type terminal equipments complete with parabolic antennas and full standby equipment and necessary cabling.

(b) Two Sola VR transformers
Total Item14,338.00

2150-13

Subcarrier multiplexing:

(a) Two twenty four channel basic assemblies

(b) Forty eight subcarrier transmitters

(c) Forty eight subcarrier receivers

(d) Forty eight voice terminations

(e) Necessary cabling

Total estimated cost

20,088.00

2150-14

Teletype multiplex:

(a) Fourteen AFC dual channel transmitters

(b) Fourteen AFC dual channel receivers

(c) Eight AFC power supplies

(d) Four fixed rack cabinets

(e) Necessary cabling and terminal boards.

Total Item

11,680.00\$46,806.00~~SECRET~~~~CONFIDENTIAL~~

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MM 2150

Quotation for U. S. Government
(continued)

Grand Total (A to B only
without repeater
24 channels.) \$46,806.00

Grand Total (A to B with
remote type
repeater including
order wire.
No Tower.
24 channels.) 60,445.00

Grand Total (A to B with
micropackage type
repeater, including
building and order
wire. No tower.
24 channels.) 59,673.50

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